

## Department of Economics University of Toronto

Eco2102: Topics in Microeconomic Theory  
GE100, Wednesday 4:00-6:00pm, Fall 2011

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### Description

This is a topic course in microeconomic theory oriented to PhD students in economics or management who have completed the first-year core sequence of microeconomic theory. The focus of this course will be contract theory and its related topics. We will first review the principal-agent framework, studying models of moral hazard and adverse selection. Then we will review some recent development in mechanism design and contract theory related topics, such as dynamic contracting and committee search. The last two weeks will be reserved for student class presentation.

### Textbooks and Notes

1. Bolton and Dewatripont (2005), *Contract Theory*, The MIT Press.
2. Milgrom (2004), *Putting Auction Theory to Work*, Oxford University Press
3. Lars Stole Notes: <http://faculty.chicagogsb.edu/lars.stole/papers/lectures.pdf>
4. Steve Tadelis Notes: [http://faculty.haas.berkeley.edu/stadelis/Econ\\_206\\_notes\\_2006.pdf](http://faculty.haas.berkeley.edu/stadelis/Econ_206_notes_2006.pdf)

### Grading

The main purpose of this course is to help you transit smoothly from taking course work to writing your own research papers. Students who registered in this course are required to write 2 referee reports, give a class presentation, and write a research proposal. The course grade will be decomposed as follows:

- Referee reports (40%, 20% each)
- Class presentation (20%)
- Research proposal (30%)
- Class participation (10%)

I will provide a list of papers (mostly recent job market papers), from which you should choose two of them to review and one of them to present in class. The paper you present can be one of the two papers you review. Both reports and proposal should be typed up.

The referee report should be 3-4 pages with 1.5 line spacing. It is very important for you to be able to evaluate the novelty/importance of different topics, which will be critical when you start to choose topics to write your dissertation. In the report, you should pay attention to the following. (1) Overall assessment of the paper. Why do you think the paper is (or is not) good? Why is the topic important/interesting? Is the idea creative? What's the most important insight of the paper? What's the main contribution to the literature? (2) Detailed critiques about the paper. For example, are the model assumptions sensible? Which assumption is critical? Are the results robust? What are the testable implications? What improvement you can suggest concerning the modeling, analysis, extensions, etc.?

As for the research proposal, I expect to see a 6-7 pages research note with 1.5 line spacing. The research proposal could be theoretical or empirical, but the topic must be broadly related to the material covered in this course. If it is a theoretical one, it shall include motivation, related literature, formal model setup, preliminary results, and testable predictions (if any). If it is an empirical proposal, it shall include motivation, related literature, theory model and its prediction, empirical identification strategy, and possible data sources. You shall talk to me about your research ideas as soon as possible.

Referee Report 1: Due November 16, 2011

Referee Report 2: Due December 7, 2011

Research Proposal: Due December 19, 2011

## Static Moral Hazard (3-4 weeks)

Topics: moral hazard model with continuous actions, first order approach, multi-task, tournaments and contests.

1. \*Holmstrom (1979), "Moral Hazard and Observability," *Bell Journal of Economics*.
2. \*Rogerson (1985), "The First-Order Approach to Principal-Agent Problems," *Econometrica*.
3. \*Mirrlees (1999), "The Theory of Moral Hazard and Unobservable Behavior: Part I," *ReStud*.
4. \*Holmstrom and Milgrom (1987), "Aggregation and Linearity in the Provision of Intertemporal Incentives," *Econometrica* 55:2, 303-328.
5. \*Holmstrom and Milgrom (1991), "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design," *Journal of Law, Economics, & Organization*.
6. \*Holmstrom. 1982, "Moral hazard in teams," *Bell Journal of Economics* 13: 324-40.
7. \*Prendergast (1999), "The Provision of Incentives in Firms," *JEL*, 7-63.
8. Grossman and Hart (1983), "An Analysis of the Principal-Agent Problem," *Econometrica* 51(1), 7-45.
9. Levin (2003), "Relational Incentive Contract," *AER*.
10. \*Lazear and Rosen (1981), "Rank-Order Tournaments as of Optimum Labor Contracts," *JPE* 89(5): 841-864.

11. Green and Stokey (1983), "A Comparison of Tournaments and Contracts," *JPE* 91(3): 349-364.
12. \*Moldovanu and Sela (2001), "The Optimal Allocation of Prizes in Contests," *AER.* 91(3): 542-558.
13. Moldovanu and Sela (2006), "Contest Architecture," *JET*.
14. Moldovanu, Sela and Shi (2007), "Contests for Status," *JPE*.

## **Dynamic Moral Hazard (1 week)**

Topics: repeated moral hazard, dynamic contracting

1. \*Holmstrom and Milgrom (1987), "Aggregation and Linearity in the Provision of Intertemporal Incentives," *Econometrica* 55:2, 303-328
2. \*Rogerson (1985), "Repeated Moral Hazard," *Econometrica*.
3. Spear and Srivastava (1987), "On Repeated Moral Hazard with Discounting," *ReStud*.
4. \*Sannikov (2007), "Principal-Agent Model in Continuous Time," *ReStud*.
5. \*DeMarzo and Sannikov (2006), "Optimal Security Design and Dynamic Capital Structure in a Continuous-Time Agency Model," *Journal of Finance*.
6. Williams (2009), "On Dynamic Principal-Agent Problems in Continuous Time," working paper.
7. Williams (2011), "Persistent Private Shocks," *Econometrica*.
8. He (2011), "Dynamic Compensation Contracts with Private Savings," forthcoming, *Review of Financial Studies*.
9. Edmans, Gabaix, Sadzik and Sannikov (2011), "Dynamic CEO Compensation," working paper.
10. Mason and Valimaki (2011), "Dynamic Moral Hazard and Stopping", working paper.

## **Adverse Selection and Mechanism Design (3-4 weeks)**

Topics: optimal and efficient mechanism design, full surplus extraction theorem, robust mechanism design, information acquisition and mechanism design

1. \*Mussa and Rosen (1978), "Monopoly and Product Quality," *JET* 18, 301-317
2. \*Myerson (1981), "Optimal Auction Design," *Mathematics of Operations Research* 6(1), 58-73.
3. \*Myerson and Satterthwaite (1983), "Efficient Mechanisms for Bilateral Trading," *JET* 28, 265-281.
4. \*Maskin and Riley (1984), "Monopoly with Incomplete Information," *RAND* 15:2, 171-196.
5. \*Milgrom and Segal (2002), "Envelope Theorems for Arbitrary Choice Sets," *Econometrica* 70, 583-601.
6. \*Bulow, J. and J. Roberts, (1989), "The Simple Economics of Optimal Auctions," *JPE*, 97(5): 1060-1090.
7. \*Maskin, E. (1992): "Auctions and Privatization," in *Privatization: Symposium in Honor of Herbert Giersch*, ed. by H. Siebert, pp. 115-136. J.C.B. Mohr, Tuebingen.

8. \*Dasgupta and Maskin (2000), "Efficient Auctions," *QJE*, 341-388.
9. \*Jehiel and Moldovanu (2001), "Efficient Design with Interdependent Valuations," *Econometrica* 69 (5), 1237-1259.
10. \*Bergemann and Välimäki (2002), "Information Acquisition and Efficient Mechanism Design," *Econometrica* 70 (3), 1007-1033.
11. Bergemann and Välimäki (2006), "Information and Mechanism Design," In Richard Blundell, Whitney Newey and Torsten Persson, eds., *Proceedings of the 9th World Congress of the Econometric Society*. Cambridge: Cambridge University Press, pp. 186-221.
12. Bergemann, Shi and Välimäki (2009), "Information Acquisition in Interdependent Value Auctions," *JEEA*.
13. Cremer and McLean (1985), "Optimal Selling Strategies under Uncertainty for a Discriminating Monopolist when Demands are Interdependent," *Econometrica* 53, 345-361.
14. Cremer and McLean (1988), "Full Extraction of the Surplus in Bayesian and Dominant Strategy Auctions," *Econometrica* 56, 1247-1257.
15. Laffont and Tirole (1985), "Using Cost Observation to Regulate Firms," *JPE*, 94(3).
16. Gabriel Carroll (2011), "When Are Local Incentive Constraints Sufficient?" *Econometrica*, forthcoming.
17. Manelli and Vincent (2009), "Bayesian and Dominant Strategy Implementation in the Independent, Private Values Model," *Econometrica* 78(6), 1905-1939.
18. Gershkov, Moldovanu and Shi (2011), "Bayesian and Dominant Strategy Implementation Revisited," working paper.
19. Yamashita, T. (2010), "Mechanism Games with Multiple Principals and Three or More Agents," *Econometrica*, 78(2), 791-801.
20. Peters and Szentes (2011), "Definable and Contractible Contracts," *Econometrica*, forthcoming.

## Dynamic Screening and Mechanism Design (1 week)

Topics: repeated adverse selection (durable goods monopoly is not covered), dynamic mechanism design

1. \*Diamond and Dybvig (1983), "Bank Runs, Deposit Insurance, and Liquidity," *JPE*.
2. \*Courty and Li (2000), "Sequential Screening," *ReStud*.
3. \*Eso and Szentes (2007), "Optimal Information Disclosure in Auctions and the Handicap Auction," *ReStud*.
4. Pavan, Segel and Toikka (2008), "Dynamic Mechanism Design," mimeo.
5. Bergemann and Valimaki (2010), "Dynamic Pivotal Mechanisms," *Econometrica*.
6. Gershkov and Moldovanu (2009), "Learning about the Future and Dynamic Efficiency," *AER*.
7. Gershkov and Moldovanu (2009), "Dynamic Revenue Maximization with Heterogeneous Objects: A Mechanism Design Approach," *AEJ: Micro*.
8. Mason and Valimaki (2010), "Learning about the Arrival of Sales," forthcoming, *JET*.

## Committee Search (1 week) and Experimentation (time permitting)

1. \*Albrecht, J., Anderson, A. and Vroman, S. (2010): "Search by Committee," *JET* 145(4), 1386-1407.
2. \*Compte, O. and Jehiel, P. (2010): "Bargaining and Majority Rules: A Collective Search Perspective," *JPE* 118(2), 189-221.
3. Compte, O. and Jehiel, P. (2010): "On the Optimal Majority Rule," working paper, Paris School of Economics.
4. \*Moldovanu and Shi (2010), "Search Committees," working paper.
5. Li, H., Rosen, S. and Suen, W. (2001): "Conflicts and Common Interests in Committees," *AER*, 91(5), 478-97.
6. Lizzeri, Alessandro, and Leat Yariv (2010): "Sequential Deliberation," working paper, California Institute of Technology.
7. Chan, J. and W. Suen (2011), "Does Simple Majority Rule Produce Hasty Decisions?" working paper, University of Hong Kong.
8. \*Keller G., S. Rady, and M. Cripps (2005), "Strategic Experimentation with Exponential Bandits," *Econometrica*.
9. \*Bonatti and Horner (2011), "Collaborating," *AER*.